and Return Postcard

Approved for use through 07/31/2006. OBM 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control

2112	_	Application Number	No	ot Assigned 10699210
TRANSMITTA	L	Filing Date	31	October 2003
FEB 2 7 2004 & FORM		First Named Inventor	BI	NTORO, Jemmy
(to be used for t correspondence afte	r initial filing)	Group Art Unit	No	ot Assigned
ET CRACE BURET		Examiner Name	No	ot Assigned
Total Number of Pages in This Submis	ssion	Attorney Docket Number	G.	ΓRC132
	ENCL OSURI	ES (check all that apply)		
·	Drawing	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
Fee Transmittal Form	 	ng-related Papers		After Allowance Communication
Fee Attached	Petition	-		to Group Appeal Communication to Board of Appeals and Interferences
Amendment/Reply After Final	Power o	onal Application of Attorney, Revocation		Appeal Communication to Group (Appeal Notice, Brief, Reply Brief)
Affidavits/declaration(s)	Termina	of Correspondence Address al Disclaimer for Refund		Proprietary Information Status Letter
Extension of Time Request		mber of CD(s)	\boxtimes	Other Enclosure(s) (please identify below):
Express Abandonment Request Information Disclosure Statement				Transmittal of Information Disclosure Statement, Non- U.S. Patent Cited References,

Parts 1.53	ander 37 CFR 1.52 or
	SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT
Firm or Individual name	Troutman Sanders, LLP Ryan A. Schneider, Reg. No. 45,083
Signature (Mydrall
Date	23 February 2004

Remarks:

CERTIFICATE OF TRANSMISSION/MAILING I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this date: 23 February 2004 Pamela J. Guthardt Typed or printed name Signature Date 23 February 2004

This collection of information is required by 37 CFR/1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 36 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Certified Copy of Priority

Response to Missing Parts/ Incomplete Application

Response to Missing

Document(s)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

BINTORO, Jemmy et al.

Serial Number: Not Assigned

Filed: 31 October 2003

For: SINGLE SUBSTRATE

ELECTROMAGNETIC ACTUATOR

Croup Art Unit.: Not Assigned

Examiner: Not Assigned

Examiner: Not Assigned

TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT (IDS) AND COPY OF IDS CITATION

Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450 Atlanta, GA 30308-2216

Sir:

In accordance with the continuing duty under 37 C.F.R. §1.56 to disclose to the United States Patent and Trademark Office any information that may be material to patentability of the above-identified invention, Applicant hereby submits an *Information Disclosure Statement* listing references presently known to Applicant relating to the above-identified application. Copies of the non-U.S. patent references are also included. The submission of this information shall not be deemed an admission that this information is necessarily material to the patentability of the above-identified application.

No fee is believed to be payable in connection with the filing of this *Information Disclosure Statement* as it is submitted prior to a *First Office Action*. Nonetheless, if a fee is required for entrance of this art, authorization to charge such fees due to deposit account 20-1507 is hereby given.

Ryan A. Schneider Reg No. 45,083

Troutman Sanders LLP
Bank of America Plaza
600 Peachtree Street, N.E., Suite 5200
Atlanta, Georgia 30308-2216

Phone: 404.885.2773 Fax: 404.962.6849

1285485_1.DOC

Approved for use through 06/30/2006. OMB 0651-0031 U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Substitute for form 1440A/PTO			· -	Complete If Known		
				Application Number	Not Assigned	
INFO	ORMATIO:	N DISC	LOSURE	Filing Date	31 October 2003	
ŠTA	TEMENT 1	BY APP	PLICANT	First Named Inventor	BINTORO, Jemmy	
	use as many sh			Group Art Unit	Not Assigned	
ن مالان	}			Examiner Name	Not Assigned	
She	1	of	4	Attorney Docket Number	GTRC132	

Alicably			U.S. PA'	TENT DOCUMENTS	
Examiner Initials	Cite No.1	U.S. Patent Documer Number Kind Co	de ² Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		4,824,073	04/25/1989		
		4, 966,646	10/30/1990		
		5,058,957	10/22/1991		
		5,333,381	08/02/1994		
		6,328,279	12/11/2001		
		0172975 A	.1 09/18/2003		
		0054835 A	1 05/09/2002		
		0100888 A	1 08/01/2002		
		0139947 A	1 10/03/2002		
		0019528 A	.1 01/30/2003		
		0155539 A	1 08/21/2003		
		0019034 A	09/06/2001		

				FOREIGN	PATENT DOCU	IMENTS		
			Foreign Patent Docum	nent			Pages, Columns, Lines,	
Examiner Initials*	Cite No. ¹	Country Code ³	Number ⁴	Kind Code ⁵ (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Where Relevant Passages or Relevant Figures Appear	T _e
						_		

Examiner	Date	
Signature	 Considered	

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete including gathering, preparing and submitted the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestion for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. Applicant's unique citation designation number (optional). See Kind Codes of U.S. Patent Documents at www.uspto.gov. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. 5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Approved for use through 06/30/2006. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

	Substitute for form 1449B/PTO				Complete If Known		
1					Application Number	Not Assigned	
A	IP ENFORM	латі(ON DISC	CLOSURE	Filing Date	31 October 2003	
٦	STÆRE	MENT	BY API	PLICANT	First Named Inventor	BINTORO, Jemmy	
	2 7 2004	as many s	heets as ne	cessary)	Group Art Unit	Not Assigned	
F	3 1 7 Dur y				Examiner Name	Not Assigned	
ľ	Sheet	2	of	4	Attorney Docket Number	GTRC132	
۱ د	الأنهم		1	•	•	<u>'</u>	

		NON PATENT LITERATURE DOCUMENTS	
Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number)s), publisher, city and/or county where published.	Т
		S. BOHM et al., A micromachined silicon valve driven by a miniature bi-stable electro-magnetic actuator, Sensors and Actuators 80 (2000) 77-83	:
		YASUHIKO SHINOZAWA et al., A Proportional Microvalve Using a Bi-Stable Magnetic Actuator	
-		MIRCEA CAPANU et al., Design, Fabrication, and Testing of a Bistable Electromagnetically Actuated Microvalve, Journal of Microelectromechanical Systems, Vol. 9, No. 2, June 2000	
		A. MECKES et al., Microfluidic system for the integration and cyclic opearation of gas sensors, Sensors and Actuators 76 (1999) 478-483	
		HYOUNG J. CHO et al., A Bidirectional Magnetic Microactuator Using Electroplated Permanent Magnet Arrays, Journal of Microelectromechanical Systems, Vol. 11, No. 1, February 2002	
		T. LISEC et al., Thermally Driven Microvalve with Buckling Behavior for Pneumatic Applications, Sensors and Materials, Vol. 8, No. 5 (1996)	
-		EDWIN T. CARLEN et al., Surface Micromachined Paraffin-Actuated Microvalve, Journal of Microelectromechanical Systems, Vol. 11, No. 5, October 2002	
		I. CHAKRABORTY et al., MEMS micro-valve for space applications, Sensors and Actuators 83 (2000) 188-193	
		DAVID S. ROBERTS et al., A Piezoelectric Microvalve for Compact High-Frequency, High-Differential Pressure Hydraulic Micropumping Systems, Journal of Microelectromechanical Systems, Vol. 12, No. 1, February 2003	
		PH. DUBOIS et al., Electrostatically Actuated Gas Microvalve based on a Ta-Si-N Membrane	
	i	<u> </u>	ŀ

Examiner	Date	
Signature	 Considered	,

^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete including gathering, preparing and submitted the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestion for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

¹ Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.

Approved for use through 06/30/2006. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Substitute for form 1449B/PTO	Complete If Known		
	Application Number	Not Assigned	
ONF ORMATION DISCLOSURE	Filing Date	31 October 2003	
STATEMENT BY APPLICANT	First Named Inventor	BINTORO, Jemmy	
(use as many sheets as necessary)	Group Art Unit	Not Assigned	
FEB 2 7 2004 1	Examiner Name	Not Assigned	
Sheet 3^3 of 4	Attorney Docket Number	GTRC132	
E. 19.	_		

QAIN:	7.483	NON DATION OF THE PARTIES DOCUMENTS	
Examiner Initials	Cite No.	NON PATENT LITERATURE DOCUMENTS Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number)s), publisher, city and/or county where published.	T ²
		M. KOHL et al., Development of stress-optimised shape memory microvalves, Sensors and Actuators 72 (1999) 243-250	
1		J. HAJI-BABAEI et al., Integrable Active Microvalve with Surface Micromachined Curled-Up Actuator	
	· · · · · · · · · · · · · · · · · · ·	NELSIMAR VANDELLI et al., Development of a MEMS Microvalve Array for Fluid Flow Control, Journal of Microelectromechanical Systems, Vol. 7, No. 4, December 1998	
		LEVENT YOBAS et al., A Novel Bulk-Micromachined Electrostatic Microvalve with a Curved-Compliant Structure Applicable for a Pneumatic Tactile Display	
		CHARLES GROSJEAN et al., A Practical Thermopneumatic Valve	
		W.K. SCHOMBURG et al., Design optimization of bistable microdiaphragm valves, Sensors and Actuators A 64 (1998) 259-264	
		COLLIN A. RICH et al., A High-Flow Thermopneumatic Microvalve With Improved Efficiency and Integrated State Sensing, Journal of Microelectromechanical Systems, Vol. 12, No. 2, April 2003	
		S. MESSNER et al., A Normally-Closed, Bimetallically Actuated 3-Way Microvalve for Pneumatic Applications	
		ANTONIO BALDI et al., A Hydrogel-Actuated Smart Microvalve with a Porous Diffusion Barrier Back-Plate for Active Flow Control	
		ROBIN H. LIU et al., Fabrication and Characterization of Hydrogel-Based Microvalves, Journal of Microelectromechanical Systems, Vol. 11, No. 1, February 2002	

Examiner	-	Date	
Signature		Considered	

^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Applicant's unique citation designation number (optional). Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete including gathering, preparing and submitted the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestion for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Approved for use through 06/30/2006. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Sub	stitute for	form 1449	В/РТО		Complete If Known							
					Application Number	Not Assigned						
JAN	EORN	1ATIO	N DISC	LOSURE	Filing Date	31 October 2003 BINTORO, Jemmy						
					First Named Inventor							
STATEMENT BY APPLICANT (use as many sheets as necessary)					Group Art Unit	Not Assigned						
ER 2 7	200, 13			•	Examiner Name	Not Assigned						
-	eet S	4	of	4	Attorney Docket Number	GTRC132	-					
	19											
RACEL	ER				LITERATURE DOCUMEN							
Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number)s), publisher, city and/or county where published.										
		JEMMY SUTANTO BINTORO et al., Mechanical and Magnetic Analysis of a Latching Electromagnetic Microvalve										
		JEMMY SUTANTO BINTORO et al., Fabrication of a Bistable Electromagnetic Actuator for Microvalve										
		JEMMY SUTANTO BINTORO et al., A Bistable Electromagnetic Actuated Microvalve with Integrated Switching Mechanism										
		JEMMY SUTANTO BINTORO et al., A Structure of Bistable Electromagnetic Actuated Microvalve Fabricated on a Single Wafer, Implementing the SLA and PDMS Technique										
	-											
			<u>-</u>									
							<u> </u>					
							1					
							1					

Examiner		Date	
Signature		 Considered	

^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete including gathering, preparing and submitted the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestion for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Applicant's unique citation designation number (optional). Applicant is to place a check mark here if English language Translation is attached.